

REMARKS

At the time the present Office Action issued, claims 1 to 18 were pending. The present amendment adds a new claims 19 and 20.

Basis for the amendment

Claim 19 is based on language found in original claim 1, which states that the drill string includes a passageway for an auxiliary tool from a first position interior of the drill string above the bottom hole assembly to a second position wherein at least part of the auxiliary tool is exterior of the drill string below the bottom hole assembly. This inherently teaches that the longitudinal internal passage provided in the bottom hole assembly affords a passageway through the bottom hole assembly for the part of the auxiliary tool from a first position above the bottom hole assembly to a second position wherein at least the part of the auxiliary tool is below the bottom hole assembly.

Claim 20 is based on language found in lines 7 to 9 on page 5 of the original specification.

No other amendments have been made. Hence, it is respectfully submitted that the amendments do not constitute an addition of subject matter.

Allowable subject matter

Numbered paragraph 6 identifies claims 4, 10 and 13 as containing allowable subject matter. Applicant agrees, and thanks the Examiner accordingly. However, in view of arguments set forth below and traversing the rejections of the pending independent claims, Applicant has chosen not to rewrite the claims at present.

It has further been assumed that Claim 18 has also been considered to contain allowable subject matter, since no specific rejection of this claim has been supported in the present Office Action. Examiner is respectfully requested to acknowledge allowability of this claim as well.

Claim rejections under 35 USC § 103

Claims 15 and 17

In Numbered paragraphs 1 and 2, claims 15 and 17 have been rejected under 35 USC § 103(a) as being unpatentable over Harrell *et al* '023.

Presumably relevant to Claim 15, the Office Action states that Figure 5 of Harrell discloses a bottom hole assembly attachable to a tubular drill string. The bottom hole assembly has a drill bit (54), a drill steering system (60), and a surveying system (62). The bottom hole assembly is provided with a longitudinal internal passage for at least part of an auxiliary tool, such as a production tubing.

It is then stated that Harrell *et al* do not explicitly state that part of the auxiliary tool is at least 5 cm in diameter.

It is then stated that Estes, in col. 3 lines 30-33 (Attorney for Applicant assumes that the Examiner has intended to apply Estes as cited in US Pat. 5,244,050), discloses the use of a bit with a tool port and passage to allow a tool with a diameter of at least 5 cm.

It is then stated in the Office Action that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the diameter of Estes on the drill bit of Harrell *et al*. This, as is alleged, would be done because it is common knowledge within the art that the size of the passage would be relative to the size of the bit and the size of the hole as a matter of design.

Attorney respectfully traverses this rejection of Claim 15.

Contrary to the statements made in the Office Action, it would not have been obvious to use the diameter of Estes on the drill bit of Harrell *et al*.

The bit of Estes is intended to permit various logging and sampling tools to pass through the bit (see Estes' abstract).

It would, without the benefit of hindsight, not be obvious to combine Harrell *et al* with Estes, because Harrell *et al* does not disclose or teach passage of a logging tool or a sampling tool through the bit.

Firstly, Harrell *et al* already have logging sensors (resistivity and gamma ray instruments) built-in into the lower sensor module 62, which is included in the bottom hole assembly 26 (see. Col 6 lines 54-67). It would not be evident why Harrell *et al* would need Estes' bit.

Secondly, Harrell *et al* only disclose running a production string and associated equipment into the well, to replace the work string 20. Since a production string is not a logging tool or a sampling tool, the motivation to combine with Estes (which is aimed at passing logging and sampling tools through the bit) is not readily provided in the art.

Thirdly, Harrell does not contain any implicit or explicit teaching to the effect that the production tubing is ever passed through the bit 54. In fact, it would render Harrell *et al* unfit for its intended purpose, because passage of the production tubing through Harrell *et al*'s bit 54 would inherently require passage of the production tubing through the remaining parts of

the bottom hole assembly 26 as well, which includes not only the bit 54, but also a completion assembly 30 (see Col. 6 lines 40 to 46). That would render Harrell *et al* inoperative for its intended functioning, because that would defeat the purpose of completion assembly 30. As explained in the paragraph bridging Cols. 9 and 10 of the specification, in conjunction with the paragraph bridging Cols. 11 and 12, production of the hydrocarbons from the reservoir is established through the completion assembly and up the inner bore of the production string (see, in particular, Col 12 lines 21-23). It is clear that, if the production tubing were to be passed through the completion assembly and through the bit to the exterior, there would not be fluid communication between the completion assembly and the production tubing.

Harrell *et al* thus being limited to cases whereby the production tubing stays above the completion assembly, there is no motivation to modify the reference by combining it with Estes which teaches passage of logging tools through a bit.

Lacking such motivation or suggestion, the Examiner has failed to establish a *prima facie* case of obviousness.

Moreover, Estes even teaches away from Harrell, which also undermines the alleged obviousness of the combination of references. This is respectfully explained as follows. Estes teaches (Col. 3, lines 37-44) that the use of long and rigid tools (as generally are production tubings) with bits like those proposed by Estes, probably requires that the drill pipe immediately above the bit have a larger than normal bore diameter. However, if anything, the drill pipe immediately above the drill bit in Harrell has a smaller than normal bore diameter because it needs to house equipment such as a lower sensor module 62 and kick-off sub 66.

So also for this reason, it would not be obvious to combine the cited references and thus no *prima facie* case of obviousness has been established.

Therefore, reconsideration is respectfully requested and, in accordance with the guidelines set forth in MPEP 2142, ultimately, withdrawal of the rejection.

By virtue of its dependence on Claim 15, withdrawal of the rejection of Claim 17 is also respectfully requested for the same reasons.

Separately from the above, Attorney for Applicant questions the correctness of the common knowledge within the art that the size of the passage would be relative to the size of the bit and the size of the hole as a matter of design, as has been alleged by the Examiner. The passage in Harrell *et al*, includes the bottom hole assembly. However, even when a large hole is drilled, the driller may use the same drill pipes and bottom hole assembly but only provided with a larger diameter drill bit. Thus it is not common knowledge

that the size of the passage is relative to the size of the bit. Examiner is respectfully invited to support the alleged common knowledge by documentary evidence as provided for in 37 CFR 1.104(d)(2).

Claims 1-3, 5, 6, and 7

In Numbered paragraph 3 of the Office Action, claims 1-3, 5 and 6 have been rejected under 35 USC § 103(a) as being unpatentable over Runia (WO 00/17488) in view of Schuh (US Pat. 5,931,239). In addition, claim 7 has been rejected under 35 USC § 103(a), see Numbered paragraph 4 of the Office Action, as being unpatentable over Runia in view of Schuh and further in view of Estes (US Pat. 5,244,050).

Supposedly relevant to Claim 1, the Office action states: Runia in Fig. 1-3 and pages 4-11 discloses a tubular drill string, which includes at its lower end a bottom hole assembly with a drill bit. The drill string includes a passageway for an auxiliary tool (40) from a first position interior of the drill string above the bottom hole assembly to a second position wherein at least part of the auxiliary tool is exterior of the drill string below the bottom hole assembly. The passage can be selectively closed. It is used to drill so as to progress the drill string into the earth formation, until a tool operating condition is met. Then opening the passageway and passing the auxiliary tool from the first position through the passageway to the second position where it is operated.

It is then stated, in the Office Action, that Runia does not disclose a rotary drill steering system, and a surveying system located in the bottom hole assembly.

Next, it is stated that Schuh in Figs. 1, 3, 6A-6D discloses a steering system for use with a rotary drill string. It is said to operate in conjunction with a survey system/MWD.

It is then stated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the steering/survey system of Schuh with the apparatus of Runia. This would, as is alleged, be done since it is common general knowledge within the drilling art to add steering mechanisms to a non-steering rotary bit if directional drilling is desired and the apparatus of Schuh is stated to allow for directional drilling with a high degree of control as taught (col. 2 lines 27-41).

Attorney respectfully traverses this rejection of Claim 1, and of Claims 2, 3, 5 and 6 each ultimately depending on claim 1.

In the response to previously submitted arguments, see Numbered paragraph 9 of the Office Action, the Examiner cites *In re McLaughlin* to support that as long as the reconstruction, which in a sense is necessarily a reconstruction based upon hindsight reasoning, takes into account only knowledge which was within the level of ordinary skill at

the time the invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

In the present case, the rejection argues that it is common general knowledge within the drilling art to add steering mechanisms to a non-steering rotary bit if directional drilling is desired. However, the common general knowledge as invoked by the Examiner still does not contain a positive motivation that would prompt the skilled person to add steering mechanisms to Runia. Such motivation is therefore based only on the Applicants own disclosure, and therefore the rejection as presented still requires impermissible hindsight.

Applicants have never denied the existence of steering mechanisms, as such. See, for instance, page 1 of the specification. Neither have Applicants ever denied existence of Runia's or Estes' disclosures (see page 5 line 22 to page 6 line 19). Since these disclosures were available, the person of ordinary skill in the art could indeed have combined the references. However, there is no factual support in the references or general knowledge showing that he would have done so, because Runia and Estes are both silent about steering and Schuh is silent about bringing a tool from the interior to the exterior of a drill string. Neither is there any other evidence of record suggesting steerable drilling systems in combination with bringing a tool from the interior to the exterior of the drill string.

Thus, making a combination of Runia and/or Estes with Schuh is only motivated by Applicant's present disclosure and it therefore constitutes impermissible hindsight.

Therefore, the Examiner still has not established a *prima facie* case of obviousness of claim 1. Reconsideration is respectfully requested, and, ultimately withdrawal of the rejection. The same requests are made in respect of Claims 2, 3, 5 to 7, each being ultimately dependent on Claim 1.

Claims 8, 9, 11, 14 and 15

In Numbered paragraph 4, Claims 7-9, 11, 14, and 15 have been rejected under 35 USC § 103(a) as being unpatentable over Runia (WO 00/17488) in view of Schuh (US Pat. 5,931,239) and further in view of Estes (US Pat. 5,244,050).

It has already been explained above why no *prima facie* case of obviousness has been established in respect of claim 7.

No *prima facie* case of obviousness has been established with respect of claims 8, 9, 11, and 14 either for the same reasons. The art does not provide a motivation for the cited combination of Runia and Schuh. Instead, the combination is made relying on impermissible hindsight. The art does also not suggest a combination of Estes and Schuh. This is also explained above.

Therefore, no *prima facie* case of obviousness has been established against the and accordingly withdrawal of the rejections is respectfully requested.

Claim 12

In Numbered paragraph 5, Claim 12 has been rejected under 35 USC § 103(a) as being unpatentable over Runia in view of Schuh and Estes as applied to Claim 8, and further in view of Comeau (US 6,340,063).

It is stated in Paragraph 7 of the Office Action that Runia in view of Schuh shows all the limitations of the claimed invention, except it does not disclose that the survey system is a tubular sub that forms part of the passageway for the auxiliary tool. It is then stated that Comeau discloses a tubular sub MDW system that has a longitudinal passage for the passage of various tools.

Attorney for Applicant respectfully traverses this rejection.

As explained above, no *prima facie* case of obviousness has yet been established on basis of Runia in view of Schuh and Estes.

Comeau does not offer remedy, because it does not teach or suggest passage of a tool through the MWD. Lacking such teaching, and lacking any teaching in Runia or the common general knowledge that would suggest directional drilling with a drilling system capable of passing tools from the interior to the exterior of the drill string, a combination of Runia with Comeau would not be obvious just like a combination of Runia with Schuh would not be obvious.

In addition, and contrary to the Examiner's statement, Comeau does not disclose that the tubular sub forms part of the passageway for the auxiliary tool. Instead, Comeau only mentions passage of fluids and so does the alleged common general knowledge that has been invoked by the Examiner.

Therefore, it is respectfully submitted that no *prima facie* case of obviousness has been established with regard to Claim 12 firstly because of lack of motivation to combine the references as cited and secondly because the combination of cited references does not disclose or teach every claimed element. For this reason the rejection should be withdrawn. Accordingly, reconsideration is respectfully requested.

Concluding remarks

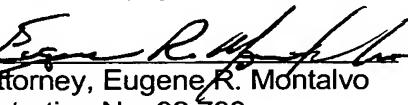
In conclusion, Attorney has addressed each and every ground for objection and rejection raised by the Examiner in the Office Action. In particular, it has been demonstrated that still no *prima facie* case of obviousness has been established against any of the claims.

This having been demonstrated, the applicant is presently under no obligation to provide evidence supporting non-obviousness (MPEP §2142).

Attorney respectfully submits that the specification and claims, whether original, previously presented, or new, are in a state ready for allowance. In the event the Examiner has any questions or issues regarding the present application, the Examiner is invited to call the undersigned prior to the issuance of any written action.

Respectfully submitted,

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